



INTERNATIONAL JOURNAL OF ISLAMIC BUSINESS

<http://e-journal.uum.edu.my/index.php/ijib>

How to cite this article:

Rahman, S. A., Ahmad, N. H., & Arshad, N. C. (2021). Bank Specific and Macroeconomic Factors Influencing Islamic Banks Deposits. *International Journal of Islamic Business*, 6(2), 37-57. <https://doi.org/10.32890/ijib2021.6.2.4>

BANK SPECIFIC AND MACROECONOMIC FACTORS INFLUENCING ISLAMIC BANKS DEPOSITS

¹ Sazana Ab Rahman, ² Nor Hayati Ahmad & ³ Noraziah Che Arshad

¹, Commerce Department, Politeknik Ungku Omar

^{2,3} Islamic Business School, Universiti Utara Malaysia

Corresponding author: sazanaabraham@gmail.com

Submitted: 31 July 2021

Revised: 8 November 2021

Accepted: 6 December 2021

Published: 31 December 2021

ABSTRACT

Deposits are like the bloodline for banks as they determine banks' lending capacity and a country's economic savings. However, the existence of a dual banking system poses a challenge to Malaysian Islamic banks competing for deposits. Despite this problem, few investigations were done to comprehensively identify the factors that could help banks attract deposits, particularly for Islamic banks. The purpose of this paper is to fill this gap on deposits of 16 Islamic banks in Malaysia. Secondary data from the bank's annual reports and the Department of Statistics of Malaysia from 2015 to 2019 were analyzed, comprising Islamic Bank Deposits and seven predictors in an empirical model using STATA. The result shows a strong model fit with 92% R squared value that Return on Assets, bank concentration, and Business Enterprise Depositor affect Islamic Bank Deposits positively and significantly while Capital Adequacy Ratio showed negative and significant influence on the deposits. These factors are strongly effective to deposits, significant at 1% level. In contrast, Financing Deposit Ratio and Gross Domestic Product do not significantly influence Islamic deposits. Contrary to economic theory, this study found that an increase in inflation encourages customers to increase their saving deposits in Malaysian Islamic banks. The findings from this study are unique to Malaysian Islamic banks. They indicate important policy implications for Islamic banks practitioners, namely, to increase their focus on business enterprise customers, improve bank's market share and profitability in order to increase deposits while taking advantage of high inflationary period to attract more depositors.

Keywords Islamic Banking, Islamic Deposit, Malaysia

INTRODUCTION

Due to the tremendous rise of Islamic banking and finance during the last two decades, there has been an increase in interest of Islamic banking research. However, how Islamic banks perform their trustworthy and stability functions primarily in the presence of competitive dual markets remains an insufficiently reported issue (Sulub & Mohd Salleh, 2019). More research is required as Islamic banks have not achieved the targeted growth level and are quite far behind the growth rate of conventional banks. For Malaysia, the government aims the Islamic banking assets to account for 40% of the whole banking industry by 2020, in line with the aspiration to make Malaysia the center in Islamic finance and banking globally. However, this target is yet to be achieved as the proportion has only reached 28.2% as of 2018, equivalent to 771,807.61 million but dipped down to 29.5% in 2019 (Bank Negara Malaysia [BNM], 2020). As of the end of 2020, Islamic banking performed better with 30% growth in assets. Hence, the quest for Malaysian Islamic banks continues to reach the growth target by increasing their assets.

One of the strategic ways to do this is by increasing deposits since banks utilize deposits to provide financing and invest in other assets (Boadi et al., 2015). The larger the bank deposits, the more opportunities for Islamic banks to expand their funding and investment. As they increase their assets, Islamic banks stand to be more profitable, resulting in higher bank value. While still competing with conventional banks, Islamic banks in Malaysia are facing problems attracting deposits. Despite this issue on stiff competition to secure deposits, only a few studies have published empirical findings in this area, especially on Islamic banks.

Since then, there has been a rapid expansion in Islamic banking in Malaysia, affecting the deposit-taking of Islamic banks. Currently, there are 16 Islamic banks throughout the country besides 26 conventional banks operating in dual banking systems efficiently. The 16 Islamic banks comprise six foreign banks and ten local banks with a total workforce of 11,288 employees (Islamic Financial Services Board [IFSB], 2020). The IFSB also reported the total assets or total liabilities and equities of Malaysia's overall Islamic banking financial activity was at RM 853,733.06 million at the end of Q3 2020, representing 28.9% of the total assets from the total banking system, which was at RM 2,953,243.93 million.

According to Mushtaq and Siddiqui (2017)), bank deposit is the crucial instrument of success for the banking sector. The authors opine that bank deposits function as a significant component and determinant of a country's savings. In order to reach economic success, it is vital for the banks to understand how to generate their funds which are fundamentally rooted in the creation of bank deposits (Eriemo, 2014). The banking industry worldwide has long acknowledged and recognized the importance of bank deposits in mobilizing financial resources and banking stability (Eriemo, 2014).

When the financial system is affected by a recession or a crisis, any increase in risk aversion is countered by strong deposit inflows, which lower interest rates (Dia, 2013). Through this process of deposit generation, banks are able to generate incentive funds from deposits for lending. During a financial crisis, the perplexing issue is that banks face difficulties obtaining deposits since companies and the public experience reduced income and financial losses. When the integrity of the banking system threatens the public's confidence (such that the public continues to keep money from banks), this further reduces the supply of deposit funds, leading to liquidity problems and credit crunch (Dia, 2013).

The 2019-2021 economic situations struck by the Covid-19 pandemic have resulted in an economic slowdown for Malaysia. Its GDP in 2019 was 4.3% but declined to -5.6% by 2020 (Department of Statistics Malaysia [DOSM], 2021a). The banking sector faced immediate capital and liquidity pressures since the Non-Performing Loan/Financing ratio increased to 0.99% in January 2021 from 0.96% in December 2019

(BNM, 2021). Eriemo (2014) said that bank deposits have some peculiar features that combine liquidity, profitability, and security elements. As the length of this Covid-19 pandemic outbreak remains uncertain, it becomes a big challenge for conventional and Islamic banks to attract new depositors and retain existing depositors to ensure ample liquidity and profitability, since the unemployment rate increased from 3.3% in Q4 2019 to 4.5% in Q4 2020 (DOSM, 2021b).

Deposits are viewed by investors as the stable and reliable liquid financial assets available, allowing them to encourage lending and borrowing to various sectors of the economy (Eriemo, 2014). From this lending activity, banks can generate higher profitability and better returns to investors. However, looking ahead, lending and financing activities for conventional and Islamic banks are anticipated to face high credit risk from non-performing loans/impaired financing. To achieve profitability, banks need to have a larger amount of deposits in order to provide more financing. Thus, Islamic banks need to find better ways to have a competitive edge in deposit-taking.

Therefore, the purpose of this paper is to empirically study the bank-specific and macroeconomic factors that affect deposits in Islamic banks. It is envisaged that the findings from this investigation would contribute salient information to Islamic banks to be efficient financial intermediaries based on Shariah law. Financial intermediation theory views banks as intermediaries playing an essential role in liquidity matching between depositors and borrowers. On the other hand, the Islamic worldview on Maqasid Shariah seeks the benefits of efficient banks in managing deposits to achieve both the economic and social objectives for the society at large (Mohammad & Shahwan, 2013).

The following is a breakdown of the paper's structure. Preceding Section 1 is the Introduction, the Justification of the Study in Section 2, followed by the Problem Statement in Section 3. Section 4 discusses the Literature Review, Section 5 describes Methodology and discussion on Results in Section 6. Section 7 concludes the paper.

A survey of the 40 articles of past literature on banks deposit indicates a contextual gap when only nine studies focused on deposits of Malaysian Islamic banks (see Appendix 1). Further, past literature survey also reveals that in other developed economies such as the United Kingdom, USA, Japan, and Gulf Cooperation Council (GCC), studies on Islamic deposits are also few and received less attention. What is more urgent is that hardly any latest comprehensive empirical analysis on bank-specific and macroeconomic variables has been published on deposits of Malaysian Islamic banks specifically for the year 2015 until 2019. Therefore, the current issue of securing greater deposits by Islamic banks has yet to be resolved satisfactorily.

One factor that surfaces during the past deposits review is the fluctuation in bank deposit generation's growth rate. The fluctuation is evident in Figure 1. Instead of a steady uptrend in the growth, the deposit that recorded 12.4% growth in 2008 decreased to 9.2% and 7.0% in 2009 and 2010, respectively. The deposit again declined in its growth sharply from 8% in 2014 to the lowest growth of 1.6% in 2015. Another sharp plunge took place in 2018 to 2019 from 8.4% to 3.1%, respectively. This trend motivates the authors to undertake this study in order to assist Malaysian Islamic banks in managing their deposit issues.

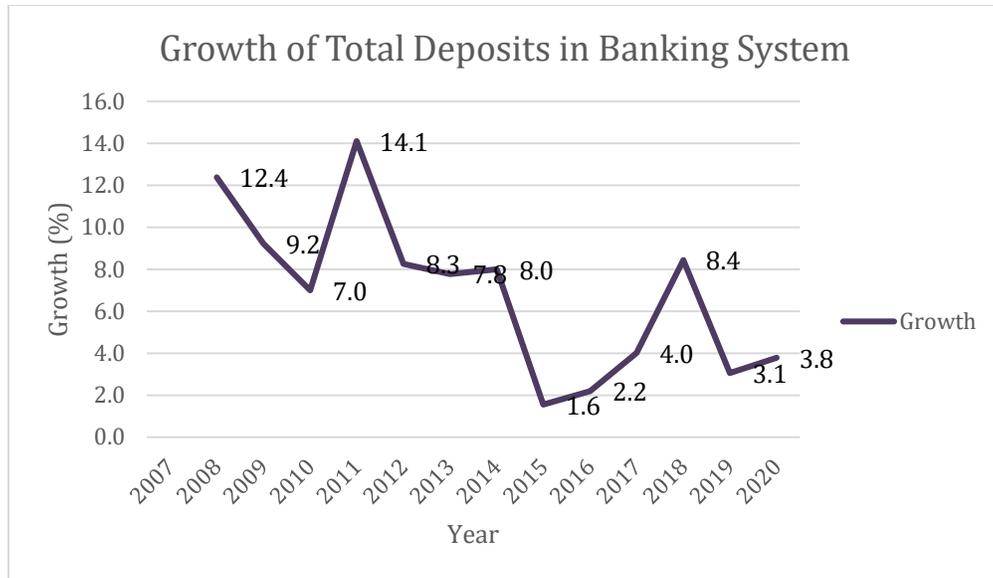


Figure 1. Growth of Deposits in Malaysia's Banking System, 2007 – September 2020

Source: Bank Negara Malaysia

Figure 2 shows an interesting trend in Islamic bank deposit growth. There is a marked difference on deposit growth between banking system in Figure 1 compared to the Islamic banking system in Figure 2. For instance, from 2008 to 2009, deposits of Islamic banks decreased by 75.4% (97.4% - 22.0%), whereas the banking system only experienced 5.4% during the corresponding period. This huge gap and the various gaps in the respective years signal a contextual gap to further study Islamic bank deposits.

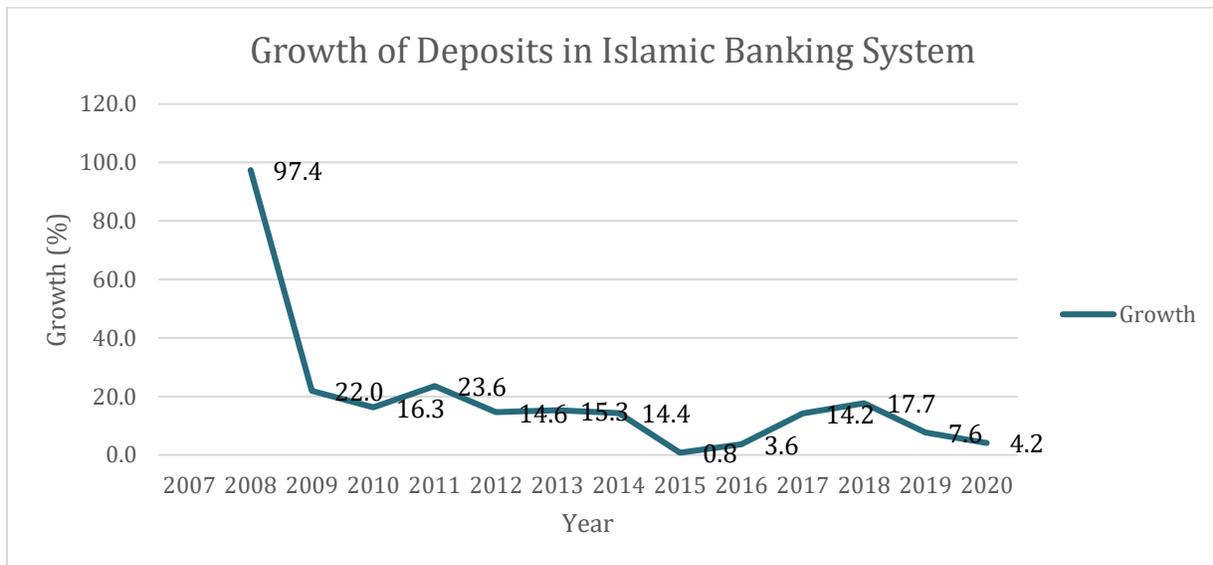


Figure 2. Growth of Deposits by in Malaysia's Islamic Banking System, 2007 – September 2020

Source: Bank Negara Malaysia

The stability of Islamic banks' deposits is critical to delivering funding throughout the crisis period. The two trends in Figure 1 and Figure 2 show that the deposit growth is not stable. Hence, there is still an open empiric issue and an unclear stand on whether Islamic banking can sustain its credit supply in times of stress (Ibrahim & Rizvi, 2018). Therefore, there is an empirical gap because studies to identify the factors influencing deposit generation, as mentioned earlier, have not been much-reported research.

To date, the reported determinants of deposit are interest rates (Ali et al., 2019; Boadi et al., 2015; Solarin et al., 2018; Mushtaq & Siddiqui, 2017; Ferrouhi, 2017; Eriemo, 2014; Dincer, 2019), liquidity (Ünvan & Yakubu, 2020), profitability (Unvan & Yakubu, 2020), capital adequacy ratio (Abdul Karim et al., 2013), gross domestic product (Ali et al., 2019; Boadi et al., 2015; Solarin et al., 2018; Ferrouhhi, 2017), unemployment (Ferrouhhi, 2017) and inflation (Ali et al., 2019; Boadi et al., 2015; Ünvan & Yakubu, 2020; Ferrouhhi, 2017; Eriemo, 2014).

The above factors are primarily from studies on deposits of conventional banks. Therefore, the lack of empirical studies on Islamic bank deposits is a gap to be fulfilled by this research covering recent performance from 2015 until 2019. Different results are expected from the previous studies in view of different financing contracts and deposit structures in Islamic banks. As such, factors like interest rate will be replaced by return on assets, loan to deposit ratio by financing to deposit ratio. Variables such as bank concentration (Herfindahl-Hirschman Index), financing to deposit ratio, and business enterprise depositor are new variables introduced in the deposit generation model in this study for Islamic banks.

JUSTIFICATION OF THE STUDY

In light of the scenario above, there is a strong justification to embark on a study on bank deposit generation for Islamic banks. Besides limited studies on deposits of Malaysian Islamic banks, this paper examined two important operational aspects which have not been highlighted in past studies but are critical to Islamic banks' performance and continuous sustainability under this challenging economic environment. These aspects are:

- i. Declining deposit from the composition of funding sources
- ii. Fluctuating trend in the deposit of Islamic banks

Declining Deposit from the Composition of Funding Sources

Preliminary analysis on the Central Bank of Malaysia (BNM) statistics highlights a daunting fact that Islamic bank deposits in terms of their composition of funding sources declined, as shown in Figure 3.

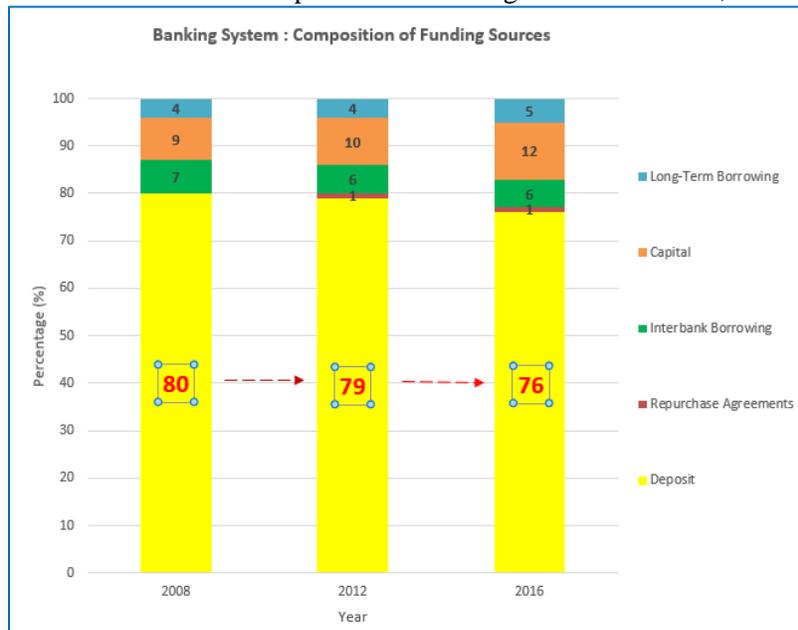


Figure 3. Sources Of funding in Malaysia's Banking System (2008, 2012, and 2016).
Source: Bank Negara Malaysia

Banks were funded primarily by customer deposits, and it is accounted for a large portion of total bank funding liabilities (Linn & Ang, 2016). Figure 3 shows a high percentage of deposits from the composition of funding sources representing 80% (2008), 79% (2012), and 76% (2016). Even though the deposit in the banking system was at a high percentage, it steadily decreased from 2008 to 2016. According to the Financial Stability and Payment Systems Report 2018, deposits and long-term borrowings account for over 70% of overall funding sources (BNM, 2018). The report also showed only a slight increment of more than 76% increase in deposits in 2018 (BNM, 2018). The decreasing percentage in deposits signifies that the banks might face difficulties in liquidity and liquidity risk in the future. Thus, it arises a concern on how Islamic banks could attract current and potential depositors to place their deposits with them.

Fluctuating Trend Analysis in the Deposit of Islamic Banks

Figure 4 and Figure 5 show the types of deposit in the banking system, which comprises demand deposit, fixed deposit, special investment deposit, general investment deposit, saving deposit, negotiable instruments of deposits issued, and others.

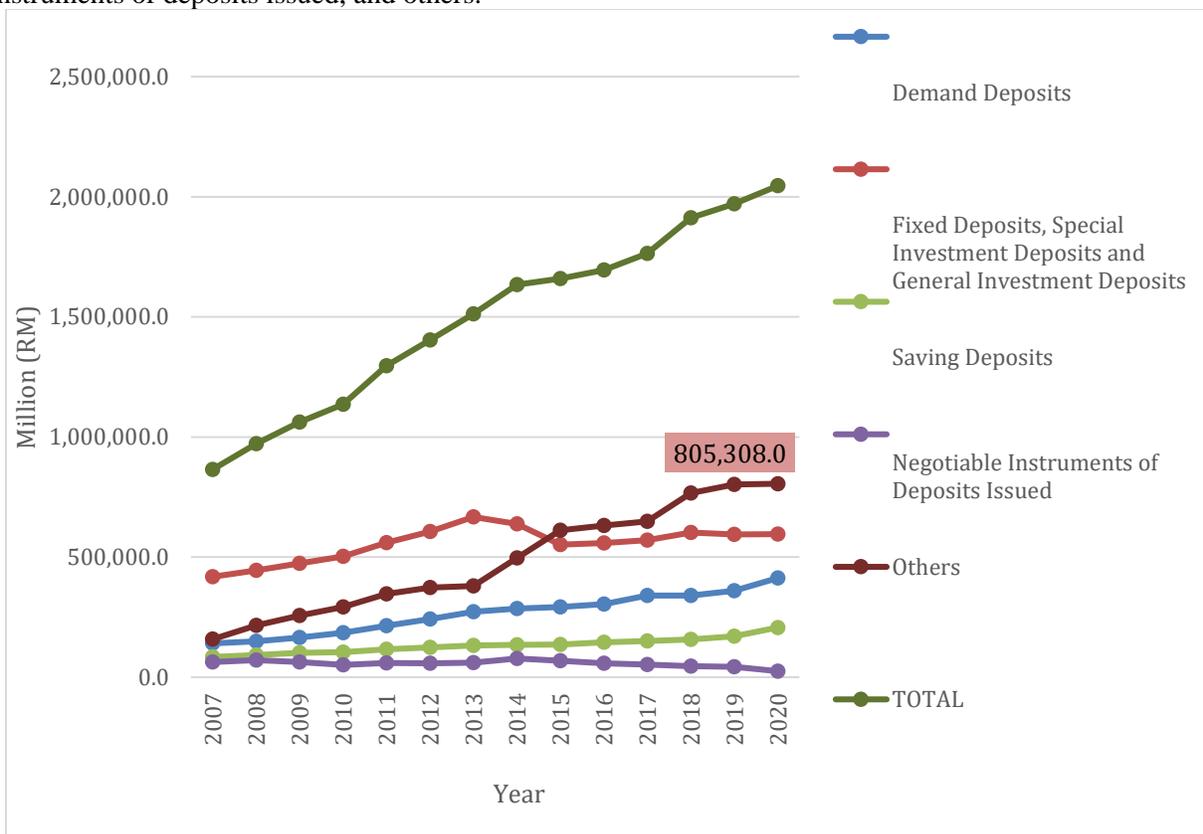


Figure 4. Total Deposit by Type in Malaysia's Banking System, 2007 – September 2020
 Source: Bank Negara Malaysia

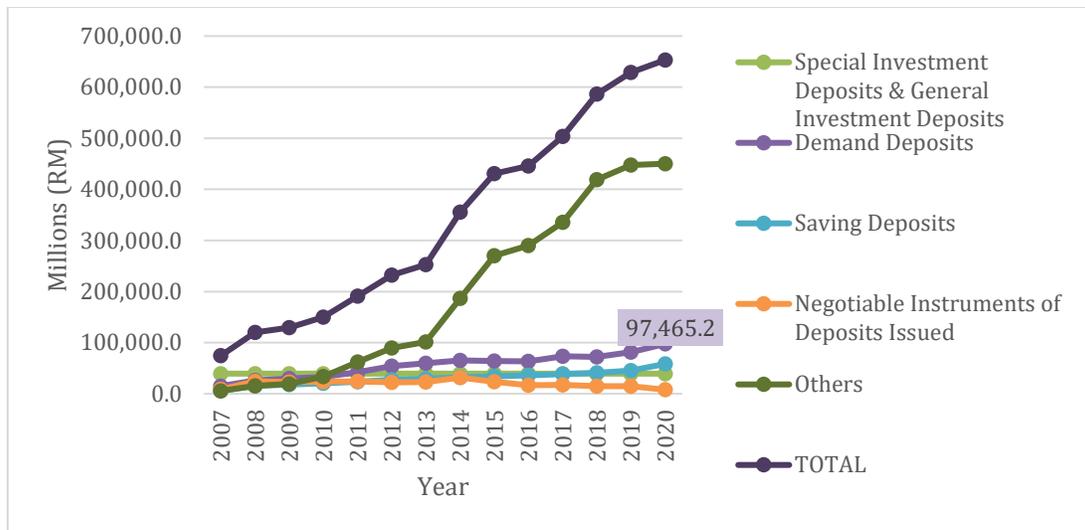


Figure 5. Total Deposit by Type in Malaysia's Islamic Banking System, 2007 – September 2020
 Source: Bank Negara Malaysia

Based on Figure 4 and Figure 5, the total deposit in nominal amount increased from 2007 to 2020. The pattern is roughly identical for Islamic and conventional banking. The Islamic banking sector, however, encountered a far smaller nominal amount than the whole banking system. Refer to Figure 5.

From the above trend analysis, there is some evidence of problems in the movement of banking deposit generations. This evidence could be supported by the generation of Islamic banks deposit, which is far below conventional banks for each type of deposit. All types of Islamic deposits can only generate below RM100,000 million every year except for "Others". In comparison, most of the deposits in the banking system are always able to generate in the range of RM 100,000 million to RM800,000 million every year. This lower amount of Islamic deposits generation does not fully support the advancement initiatives of the Islamic financial system and the innovation of Islamic banking products and services throughout these recent years (BNM, 2016).

LITERATURE REVIEW

Islamic banks, like conventional banks, are profit-maximizing organizations that play an important role in most Muslim countries. However, unlike conventional banks, Islamic banks do not charge or earn interest on all financial transactions including deposits. Instead, Islamic banks share profits and losses with depositors. In addition, Islamic finance does not aim to execute financial intermediation as the ultimate goal (Nawaz, 2019). Its aim is more holistic that is two folds; generating profitable performance for the shareholders and providing benefits to all as imbedded in the Maqasid Shariah (Siti Amaroh & Masturin, 2018). Thus, Islamic banks exist to bring moral and fiduciary financial solutions to society. Gani and Bahari (2020) stated that the Islamic banking industry has significantly improved the financial system, and boosting economic growth. The authors also noted that the Islamic banking sector in Malaysia performed well in its primary duty of financial intermediation by mobilizing efficiently deposits received from depositors to meeting the needs of its business partners.

According to Mushtaq and Siddiqui, (2017), bank deposits are the key to the banking industry's success. As a source of funds, banks rely on depositors' money (Unvan & Yakubu, 2020; Asutay & Othman, 2020), and a significant portion of bank assets are usually supported by customer' deposits (Asutay & Othman, 2020). Fah and Hassani, (2014) further stressed that, a bank's profitability and performance outcomes might indicate whether or not investors and depositors should invest or withdraw their funds. The results in the

study affirmed that loans, and deposits are positive and significantly related to banks' profitability. The researchers found that the fluctuations of loans and deposits has no substantial impact on profitability of banks in Malaysia. Therefore, the investigations on other factors related to deposit and profitability continues to command great interest in banking literature; among which are reviewed here.

The capital adequacy ratio (CAR) is a comparison measurement between capital to risk-weighted credit exposures. BNM reported that a financial institution must hold and constantly keep the requirements of minimum CAR. In 2018, the capital conservation buffer was increased by 1.875% (from 8% to 9.875%) of the total CAR; then, it shall be 2.5% as of 2019 (BNM, 2020). For Islamic banks, the numerator of CAR is the sum of Tier 1 and Tier 2 as required by Capital Adequacy Framework for Islamic Banks (Capital Components). A better understanding of the implications of bank capital ratios on liquidity creation is required (Berger & Sedunov, 2017). Deposits generation creates liquidity on the liability side of a bank's balance sheet. The suggestion by Berger & Sedunov (2017) thus shows it is imperative to study further the relationship between a bank's capital adequacy ratio and deposits as past studies concentrate on conventional banks. What is lacking is how an Islamic bank's capital adequacy ratio affects the generation of Islamic bank deposits.

The Herfindahl–Hirschman Index (HHI) is a widely used indicator of market concentration. The HHI is calculated by squaring each rival firm's market share and then adding the resulting figures together. Maji and Hazarika (2018) compute HHI based on bank deposits and found that a higher HHI value signals greater market concentration or less competition. Kamran et al. (2019) measure the HHI by taking the sum of squares of the percentage of total deposits across all banks. The measurement of HHI is widely used to describe competition in the banking system in previous literature (Xia et al., 2021). Thus, the HHI is a proxy to be used in this study for the level of Islamic bank competition.

The loan to deposit ratio (LDR) is used to measure a bank's liquidity by comparing the total loans with the total deposits. If the LDR is too high, the bank will be unable to cover unanticipated financial requirements. However, if the LDR is too low, it is possible that the bank is unable to generate much money as it should. According to Linn and Ang (2016), until the early 2000s, Malaysian banks generally depended on deposits of the wholesale and retail segments for funding. The authors indicated that the deposits accounted for 82% of total financing liabilities at the turn of the millennium, reflecting the high savings rate. In the perspective of Islamic banks, the terminology of financing to deposit ratio (FDR) is more appropriate to meet the conditions of Shariah compliance. Optimization of financing distribution or FDR has a function similar to the LDR. In other words, FDR also describes a bank's liquidity level (Nanda, 2020).

The gross domestic product (GDP) is a significant macroeconomic factor since it measures the size and performance of an economy. Sekmen (2021) indicates that there is a long-term relationship between Islamic deposits, conventional deposits, and the growth of an economic. However, no such relationship exists in the medium-term. Berger and Sedunov (2017) found that there is a significant positive relationship between bank's liquidity and GDP.

When an economy's price level rises, inflation occurs, and when it falls, deflation occurs (Krugman et al., 2015). Undeniably, inflation reduces the purchasing power of a currency over time. The relationship between inflation and Islamic bank deposits in the prior study is not contradict with the overall theory of inflation, saving, and consumption behavior relationship Abduh et al., (2011). The researchers analyzed the dynamic impacts of inflation on the total Islamic banks' deposits fluctuation. Despite the banks raise the rate of return in response to the rising inflation, they find that households still require more money for consumption and expenditures, negatively impacting their overall savings and deposits.

Customers' attitudes have been identified as one of the most important factors influencing Islamic banking business (Dawami, 2020). Customers' behavior and Islamic bank qualities are closely related to banks' competitiveness (Utami et al., 2020). Customers' impressions towards the value or characteristics of banking will impact whether they select conventional or Islamic banks to place their money. As indicated by these findings, Islamic banks must closely recognize and comprehend which type of customers can positively impact the bank. The customers of Islamic bank deposits are individuals, business enterprises, the government sector, and others. The Islamic banking business attempts to attract more customers in order to improve the whole industry and gain a competitive advantage. Knowledge of the types of consumers who choose Islamic deposits benefits Islamic banks to understand clearly their customers' sentiments. This study identifies business enterprise as the customer type to be one of the variables to be tested in understanding how business enterprises' deposits affect the performance of total deposits of Islamic banks. Based on the above literature review, this study on Islamic bank deposits examines two types of factors which are bank-specific and macroeconomic. In the context of Islamic banks, scanty literature exists in this area. Hence, this study expects to contribute some empirical findings to assist Islamic banks in their policy formulation to increase their deposits.

METHODOLOGY

This study aims to identify influential factors influencing bank deposits of 16 Islamic banks in Malaysia, comprising ten local banks and six foreign banks. The local Islamic banks are Affin Islamic Bank Berhad, Alliance Islamic Bank Berhad, AmBank Islamic Berhad, Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, CIMB Islamic Bank Berhad, Hong Leong Islamic Bank Berhad, Maybank Islamic Berhad, Public Islamic Bank Berhad and RHB Islamic Bank Berhad. The foreign Islamic banks are Al Rajhi Banking & Investment Corporation (Malaysia) Berhad, Asian Finance Bank Berhad, HSBC Amanah Malaysia Berhad, Kuwait Finance House (Malaysia) Berhad, OCBC Al-Amin Bank Berhad and Standard Chartered Saadiq Berhad. The data is limited to secondary data obtained from the Annual Report of Islamic Banks and the Department of Statistics of Malaysia website. The study period covers from 2015 until 2019. The financial data were converted into financial ratios, which are proxies to dependent and independent variables in the empirical model. The dependent variable is Islamic bank deposits, and the independent variables comprise seven factors. This is illustrated by the conceptual framework of the study as in Figure 6.

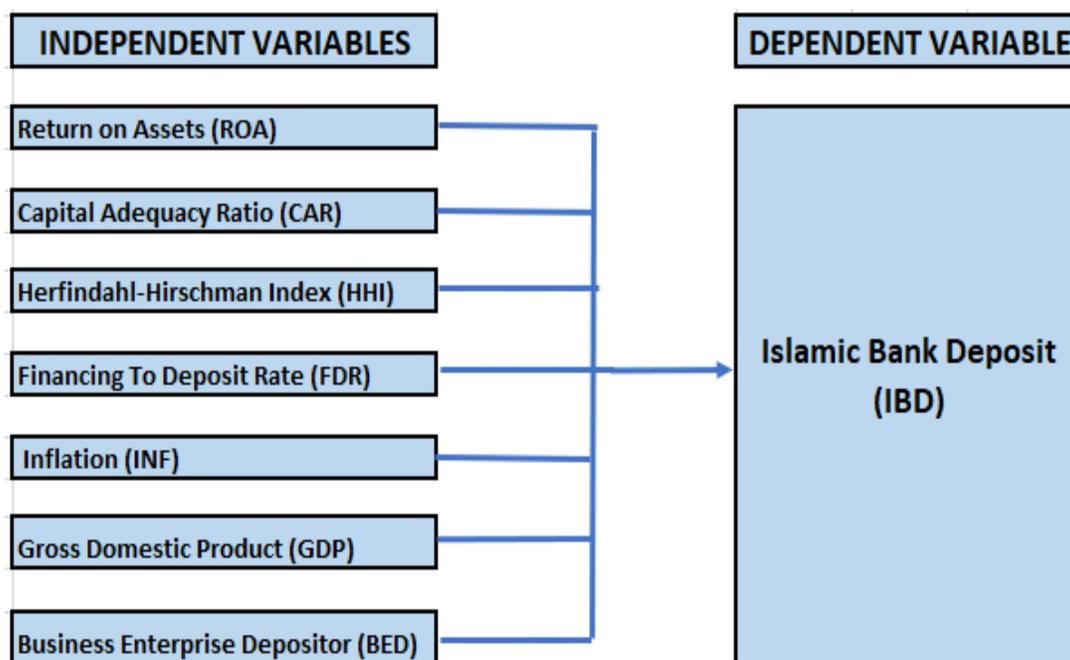


Figure 6. *Conceptual Framework*

Operational Definition and Measurement

The operational definition for each variable, source and measurement are illustrated in Table 1.

Table 1
Operational Definition, Source, and Measurement of Variables

Variables	Operational Definition	Source	Measurement
Dependent Variable			
Islamic Bank Deposit (IBD)	A sum of money received or paid in conformity with Shariah principles.	Section 2 (1) IFSA 2013	The total amount of Islamic bank deposits (demand, saving, special investment, negotiable instruments, and other deposits)
Independent Variables			
Return on Assets (ROA)	The ratio of the net income to total assets.	Meslier et al. (2017)	Net Income (profit before extraordinary items, taxes, and Zakat) / Total Asset
Capital Adequacy Ratio	The ratio of equity to total assets	Unvan and Yakubu (2020)	CET1 @Tier 1 (CAR is computed by the bank after taking into account

(CAR)			the credit, market and operational risk)
Herfindahl-Hirschman Index (HHI)	Bank Concentration. The HHI is calculated by squaring each competing firm's market share and then summing the resulting figures together	Huang et al., (2014)	Total Asset of Islamic Bank / Total Asset of Industry
Financing to Deposit Ratio (FDR)	A ratio that demonstrates the bank's ability to reimburse customers when they withdraw funds using the provided financing as the source of liquidity	Linn & Ang (2016)	Total Financing and Advances / Total Deposit from Customers
Inflation (INF)	Inflation is instrumented using percentage change in Customer Price Index	Arshed & Kalim, (2021)	Customer Price Index
Gross Domestic Product (GDP)	GDP is a measure of the economy's size and performance that is adjusted for price variations	Isaev, et al., (2017)	Real gross domestic product growth rate
Business Enterprise Deposit (BED)	Deposits consist of money placed into banks by business enterprise customer	By Author	The total amount of Islamic deposit generates from business enterprise depositor

Empirical Model Specification

This paper aims to identify influential factors influencing Islamic bank deposits. The Islamic bank deposit as the dependent variable was measured using the total bank's deposits logarithm IBD. The seven independent variables as the predicted influential factors, namely: five bank-specific variables (return on assets ROA; capital adequacy ratio CAR; Herfindahl-Hirschman index HHI; financing to deposit ratio FDR; logarithm of total business enterprise deposits BED); and two macroeconomic variables (inflation INF; gross domestic product GDP). The baseline empirical model is as follows: -

$$IBD_{it} = \beta_0 + \beta_1ROA_{it} + \beta_2CAR_{it} + \beta_3HHI_{it} + \beta_4FDR_{it} + \beta_5INF_{it} + \beta_6GDP_{it} + \beta_7BED_{it} + \epsilon_{it}$$

Where, ϵ_{it} is the standard error term of bank (i) in a time period (t).

The variables were analyzed using STATA. The data analysis technique includes descriptive analysis, diagnostic test, correlation, and regression test.

RESULTS AND DISCUSSION

Descriptive Analysis

Table 2 shows the descriptive statistics for all the variables included in the model, with 80 data observations used in this study.

Table 2
Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
IBD	80	16.617	1.181	13.683	18.959
ROA	80	0.008	0.004	-0.002	0.016
CAR	80	0.145	0.047	0.099	0.302
HHI	80	0.061	0.070	0.004	0.313
FDR	80	1.076	0.377	0.445	2.762
INF	80	1.184	0.027	1.152	1.215
GDP	80	0.049	0.005	0.043	0.058
BED	80	15.635	1.178	13.332	18.057

All variables exhibit low standard deviation. This indicates slight variation among the 16 Islamic banks regarding the bank-specific factors (IBD, ROA, CAR, HHI, FDR, and BED). The average deposits of Malaysian Islamic banks during the study period is lnRM 16. 6174 or (RM 29,881,649 billion) with a maximum amount of RM 171,346,810 billion and a minimum amount of RM 875,694 billion. ROA on average is 0.8%, with the maximum ROA of 1.6%. Noted that there were Islamic banks that experienced negative profitability returns. Table 3 shows that Malaysian Islamic banks are well-capitalized as the average CAR is 14.5%. This indicates that the total capital base of Islamic banks adequately covered 14.5x their risk-weighted assets, which is higher than the 8% required by international standards. This suggests that Malaysian Islamic banks have the strength to absorb their financial risks. FDR on average, is 1.076. This ratio means that the Islamic banks in Malaysia had given out an amount of financing 1.076 x more than the amount of their deposits. Thus, the larger the Islamic bank's deposits, the higher the financing it can offer to its customers. Provided the financings are for good quality borrowers, the bank stands to earn higher ROA.

Baltagi (1995) claims that by combining time series of cross-section observations, panel data gives “more meaningful data, greater variability, less collinearity among variables, more degrees of freedom, and more efficiency”. In short, panel data can enrich empirical research in ways that cross-section or time series data cannot do so (Gujarati et al., 2012). The data used in this study is secondary data from the Islamic banks Annual Report and Department of Statistics Malaysia. These data are grouped into a panel data format, which combines time series and cross-section data. This study employs Data Panel Regression Analysis by evaluating 80 observations and was analyzed using simple linear OLS (Ordinary Least Squares). All tests have met the panel data regression assumptions in terms of linearity, multicollinearity, normality, homoscedasticity, and heteroscedasticity.

Diagnostic Test

A test of multicollinearity using Variance Inflation Factor (VIF) indicates no multicollinearity as the VIF value is less than 10 (Gujarati et al., 2012), and the mean value is 2.47, as shown in Table 3.

Table 3
Multicollinearity test

Variable	VIF	1/VIF
ROA	1.90	0.5256
CAR	1.76	0.5684
HHI	4.10	0.0616
FDR	1.50	0.6649
INF	1.19	0.8437
GDP	1.04	0.8437
BED	5.82	0.1718
Mean VIF	2.47	

Correlation Analysis

Table 4 presents the correlation analysis between the dependent variable IBD and independent variables. The result shows that IBD is correlated negatively to CAR (r -0.5154) at the level of 1%, FDR (r -0.3235) at the level of 1%, GDP (r -0.0366) at the level of 1%, and correlated positively to ROA (r 0.6934) at the level of 1%, HHI (r 0.7704) at the level of 1%, INF (r 0.1607) at the level of 1%, BED (r 0.9278) at the level of 1%.

Table 4
Pearson Correlation Matrix

Variable	IBD	ROA	CAR	HHI	FDR	INF	GDP
IBD	1.0000						
ROA	0.6934 0.0000***	1.0000					
CAR	-0.5154 0.0000***	-0.5085 0.0000***	1.0000				
HHI	0.7704 0.0000***	0.3992 0.0000***	-0.1048 0.3550	1.0000			
FDR	-0.3235 0.0034***	-0.1994 0.0762*	0.2804 0.0118**	-0.0176 0.8769	1.0000		
INF	0.1607 0.1545	0.1631 0.1483	0.1128 0.3190	-0.0016 0.9891	-0.1057 0.3510	1.00000	
GDP	-0.0366 0.7471	-0.1179 0.2977	0.0007 0.9954	-0.0024 0.9835	-0.0270 0.8119	-0.0647 0.5683	1.0000
BED	0.9278 0.0000***	0.5982 0.0000***	-0.401 0.0002***	0.7846 0.0000***	-0.3646 0.0009***	0.1402 0.2148	-0.0722 0.5247

*, **, *** significant at the 10%, 5%, 1% level respectively

Regression Analysis

Table 5 below shows that the model is strong, as indicated by R-squared and adjusted R-squared of 0.9277 (92.8%) and 0.9207 (92.1%), respectively. The statistics imply that the seven independent variables were able to explain 92% of the variation in deposits of Malaysian Islamic banks. As to the variables which effectively influenced the variation in the deposits are shown in Table 6. Return on Assets (ROA), Herfindahl-Hirschman Index (HHI), Inflation (INF), Gross Domestic Product (GDP), and Business Enterprise Deposits (BED) are significant (except for GDP) and have positive values on deposits. The positive value indicates that any increment or decrease in each variable will have the same effect on Islamic Banks Deposits (IBD). Although both the Capital Adequacy Ratio (CAR) and the Financing Deposit Ratio (FDR) are negative, only the CAR is significant. The negative value means that every increment from CAR and FDR will cause Islamic Banks Deposits (IBD) to decrease. Overall, the result of linear regressions from Table 6 can be formulated as follows:

$$IBD_{it} = 4.397 + 43.748ROA - 5.194CAR + 5.096HHI - 0.128FDR + 3.818INF + 4.983GDP + 0.490BED + \varepsilon_{it}$$

Table 5
Goodness of Fit Test

Model	Sum of squares	Df	Mean square	F	Prob > F
Regression	102.201615	7	14.6002308	131.98	0.0000
Residual	7.96487704	72	0.110623292		
Total	110.166492	79	1.39451256		
R-Squared	: 0.9277				
Adj R-Squared	: 0.9207				

Table 6
Coefficient of Determination Test

IBD	Coefficient	t-stat	P > [t]
ROA	43.7479 ***	3.54	0.001
CAR	-5.1944 ***	-4.94	0.000
HHI	5.0955 ***	4.72	0.000
FDR	-0.1283	-1.05	0.295
INF	3.8181 **	2.55	0.013
GDP	4.9825	0.69	0.493
BED	0.4900 ***	6.39	0.000
CONS	4.3966	2.27	0.026

*, **, *** significant at the 10%, 5%, 1% level respectively

Table 6 reports the regression results. There are four out of five bank-specific factors which affect Islamic bank deposits strongly. These factors, namely return on assets (ROA), capital adequacy ratio (CAR), Herfindahl Hirschman Index (HHI), and business enterprise depositors (BED) and are vital factors influencing Islamic bank deposit growth as they are significant at 1% level. On the other hand, only inflation is a significant economic variable at 5% level, affecting deposits while GDP is not significant.

For the bank factors, ROA (coefficient estimate =43.7479) suggests that a 43.7479-point increase in bank profitability leads to a one-point increase in deposits. The result implies that Islamic banks need to be profitable as depositors seek profitable banks to deposit their savings. HHI measuring bank concentration in terms of its assets share of the market (coefficient estimate = 5.0955) indicates that a 5.0955-point increase in a bank's market share results in one-point increase in deposits. This result seems to conclude that the larger the Islamic bank, the larger its capacity to attract deposits will be. Which type of depositors has a significant influence on Islamic bank deposits? This study found that Business Enterprises play a significant role in increasing IBD as evidenced by the BED coefficient estimate = 0.4899; significant at 1% level.

CAR, on the other hand, has a significant but negative influence on IBD. It suggests that the stronger Islamic banks already have large deposits; hence, the need to seek more deposits is lower. On the other hand, this finding has another interesting interpretation. We are more inclined to interpret that the smaller or weaker capitalized Islamic banks (low CAR) will need to secure more deposits from their customers, especially long-term deposits, to remain competitive. These findings support intermediation theory.

For the macroeconomic variables, inflation is significant with a positive impact at 5% level (Coefficient estimate = 3.8181). The theory of inflation stipulates that inflation shrinks bank deposits (Abduh et al., 2011), however, our result shows contradictory findings which higher inflation encourages investors and customers to deposit more in Islamic banks. GDP does not significantly influence Islamic bank deposits, but its positive sign supports past findings that a good economy leads to higher saving deposits.

CONCLUSION

This study aimed to gather empirical information concerning the factors that have a significant impact on Islamic bank deposits in Malaysia. The study was motivated by a scant study on Islamic bank deposits in global banking literature despite deposits being the bloodline for any bank operations. Banks rely on deposits to provide financing and make investments to generate profitability and sound returns to their stakeholders. We also found pertinent issues on Islamic bank deposits (IBD) in Malaysia. The first issue is the declining and fluctuating growth in IBD. The second issue is the lack of empirical study employing variables specific to Islamic banks. These two issues present the contextual and empirical gaps in this study.

We used a more comprehensive definition of IBD to include demand deposits, saving deposits, special investment deposits, general investment deposits, negotiable Islamic instruments deposits, and other deposits by following the Shariah principle's applications and the requirements of IFSA 2013. The Islamic deposit products for demand and saving accounts are *Wadhiah Yad Dhamanah*, *Qard Hassan*, *Wakalah*, or *Mudharabah*, while for the special and general investment accounts are *murabahah*, *mudharabah* or *wakalah*.

Our findings show that Return on Assets (ROA), Herfindahl-Hirschman Index (HHI), Inflation (INF), and Business Enterprise Depositor (BED) have a positive and significant influence on Islamic Bank Deposits (IBD) while Capital Adequacy Ratio (CAR) affects Islamic Bank Deposits (IBD) negatively and significantly. Inflation is positive and significant to IBD, whereas Financing Deposit Ratio (FDR) and Gross Domestic Product (GDP) do not significantly influence deposits of Malaysian Islamic banks.

Our findings suggest several policy implications. Firstly, Malaysian Islamic banks have to focus on continuing to attract business enterprises as their depositors as this type of bank customer contributes significantly to Islamic deposits. Secondly, Islamic banks must inevitably remain profitable and maintain

a good market share as improvements in these factors attract more depositors. Thirdly, our findings could be useful to Islamic bank regulators and operators in evaluating Asset and Liability Management policies on deposits maturity mismatch by considering the effect of inflation and saving behavior on Islamic deposits.

ACKNOWLEDGEMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. We would like to acknowledge the assistance of Dr Muhammad Abrar Baharom for the Annual Reports of Islamic banks which made this study possible. Our thanks also to other individuals who have directly and indirectly contributed to completing this study and this paper.

REFERENCES

- Abduh, M., Omar, M. A., & Duasa, J. (2011). The impact of crisis and macroeconomic variables towards Islamic banking deposits. *American Journal of Applied Sciences*, 8(12), 1413–1418. <https://doi.org/10.3844/ajassp.2011.1413.1418>
- Abdul Karim, M., Hassan, M. K., Hassan, T., & Mohamad, S. (2013). Capital adequacy and lending and deposit behaviors of conventional and Islamic banks. *Pacific Basin Finance Journal*, 28, 58–75. <https://doi.org/10.1016/j.pacfin.2013.11.002>
- Ali, S. A. S., Eldaw, K. E. H. I., Alsmadi, M. K., & Almarashdeh, I. (2019). Determinants of deposit of commercial banks in Sudan: An empirical investigation (1970–2012). *International Journal of Electronic Finance*, 9(3), 230–255. <https://doi.org/10.1504/IJEF.2019.099066>
- Allen, F., Carletti, E., & Marquez, R. (2015). Deposits and bank capital structure. *Journal of Financial Economics*, 118(3), 601–619. <https://doi.org/10.1016/j.jfineco.2014.11.003>
- Amin, H. (2013). Some Viewpoints of Islamic Banking Retail Deposit Products in Malaysia. *Journal of Internet Banking and Commerce*, 18(12), 1–11. <http://www.arraydev.com/commerce/jibc/>
- Anderson, R. D. J., Ashton, J. K., & Hudson, R. S. (2014). The influence of product age on pricing decisions: An examination of bank deposit interest rate setting. *Journal of International Financial Markets, Institutions and Money*, 31(1), 216–230. <https://doi.org/10.1016/j.intfin.2014.03.010>
- Anginer, D., Demircuc-Kunt, A., & Zhu, M. (2014). How does deposit insurance affect bank risk? Evidence from the recent crisis. *Journal of Banking and Finance*, 48, 312–321. <https://doi.org/10.1016/j.jbankfin.2013.09.013>
- Arshed, N., & Kalim, R. (2021). Modelling demand and supply of Islamic banking deposits. *International Journal of Finance and Economics*, 26(2), 2813–2831. <https://doi.org/10.1002/ijfe.1936>
- Asutay, M., & Othman, J. (2020). Alternative measures for predicting financial distress in the case of Malaysian Islamic banks: assessing the impact of global financial crisis. *Journal of Islamic Accounting and Business Research*, 2011. <https://doi.org/10.1108/JIABR-12-2019-0223>
- Baltagi, B.H. (1995). *Econometric Analysis of Panel Data*, John Wiley and Sons, New York.
- Bank Negara Malaysia. (2016). *Financial Stability and Payment Systems Report 2016*. <https://www.bnm.gov.my/-/fspr2016>
- Bank Negara Malaysia. (2018). *Financial Stability and Payment Systems Report 2018*. <https://www.bnm.gov.my/-/fspr2016>
- Bank Negara Malaysia. (2020). *Monthly Highlights and Statistics*. <https://www.bnm.gov.my/-/msb-11-2020>

- Bank Negara Malaysia. (2021). Monthly Highlights and Statistics. <https://www.bnm.gov.my/-/monthly-highlights-and-statistics-in-sep-2021>
- Berger, A. N., & Sedunov, J. (2017). Bank liquidity creation and real economic output. *Journal of Banking and Finance*, 81, 1–19. <https://doi.org/10.1016/j.jbankfin.2017.04.005>
- Boadi, E.K., Li, Y. and Lartey, V.C. (2015). Determinants of Bank Deposits in Ghana: Does Interest Rate Liberalization Matters? *Modern Economy*, 06(09), 990–1000. <https://doi.org/10.4236/me.2015.69094>
- Boyacioglu, M. A., Kara, Y., & Baykan, Ö. K. (2009). Predicting bank financial failures using neural networks, support vector machines and multivariate statistical methods: A comparative analysis in the sample of savings deposit insurance fund (SDIF) transferred banks in Turkey. *Expert Systems with Applications*, 36(2 PART 2), 3355–3366. <https://doi.org/10.1016/j.eswa.2008.01.003>
- Brown, M., Guin, B., & Morkoetter, S. (2020). Deposit withdrawals from distressed banks: Client relationships matter. *Journal of Financial Stability*, 46, 100707. <https://doi.org/10.1016/j.jfs.2019.100707>
- Collender, R. N., & Shaffer, S. (2003). Local bank office ownership, deposit control, market structure, and economic growth. *Journal of Banking & Finance*, 27, 27–57. www.elsevier.com/locate/econbase
- Craig, B. R., & Dinger, V. (2013). Deposit market competition, wholesale funding, and bank risk. *Journal of Banking and Finance*, 37(9), 3605–3622. <https://doi.org/10.1016/j.jbankfin.2013.05.010>
- Dawami, Q. (2020). Factors Influencing the Preference of Customers Towards Islamic Banking: Evidence from Malaysia. *Journal of Islamic Economic Laws*, 3(1), 48–67. <https://doi.org/10.23917/jisel.v3i1.10191>
- Department of Statistics Malaysia (2021a). Malaysia Economic Performance Fourth Quarter 2020. https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=100&bul_id=Y1MyV2tPOGNsVUtnRy9SZGdRQS84QT09&menu_id=TE5CRUZCb1h4ZTZMODZlbnk2aWRRQT09
- Department of Statistics Malaysia (2021b). Key Statistics of Labor Force in Malaysia, September 2021. https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=124&bul_id=NXhZL3c1UmZ6OHM2Z2grTzITN0hGQT09&menu_id=Tm8zcnRjdVRNWWlpWjRlbnmtlaDk1UT09
- Dia, E. (2013). How do banks respond to shocks? A dynamic model of deposit-taking institutions. *Journal of Banking and Finance*, 37(9), 3623–3638. <https://doi.org/10.1016/j.jbankfin.2013.05.023>
- Dincer, H. (2019). HHI-based evaluation of the European banking sector using an integrated fuzzy approach. *Kybernetes*, 48(6), 1195–1215. <https://doi.org/10.1108/K-02-2018-0055>
- Eriemo, N. O. (2014a). Macroeconomic Determinants of Bank Deposits in Nigeria. *Journal of Economics and Sustainable Development Wwww.Iiste.Org ISSN*, 5(10). www.iiste.org
- Fah, C., & Hassani, A. (2014). A Study of Islamic and Conventional Banks in Malaysia. *Journal of King Abdulaziz University-Islamic Economics*, 27(1), 73–99. <https://doi.org/10.4197/islec.27-1.3>
- Ferrouhhi, E. M. (2017). *Determinants of bank deposits in Morocco*. <https://mpr.aub.uni-muenchen.de/79075/>
- Fonseca, A. R., & González, F. (2010). How bank capital buffers vary across countries: The influence of cost of deposits, market power and bank regulation. *Journal of Banking and Finance*, 34(4), 892–902. <https://doi.org/10.1016/j.jbankfin.2009.09.020>
- Gujarati, D. N., Porter, D. C., & Gunasekar, S. (2012). Basic econometrics. Tata McGraw-Hill Education.
- Gani, I. M., & Bahari, Z. (2021). Islamic banking's contribution to the Malaysian real economy. *ISRA International Journal of Islamic Finance*, 13(1), 6–25. <https://doi.org/10.1108/ijif-01-2019-0004>
- Grassa, R. (2018). Deposits structure, ownership concentration and corporate governance disclosure in GCC Islamic banks: Empirical evidence. *Journal of Islamic Accounting and Business Research*, 9(4), 587–606. <https://doi.org/10.1108/JIABR-10-2014-0034>

- Grira, J., Hassan, M. K., & Soumaré, I. (2016). Pricing beliefs: Empirical evidence from the implied cost of deposit insurance for Islamic banks. *Economic Modelling*, 55, 152–168. <https://doi.org/10.1016/j.econmod.2016.01.026>
- Hamza, H. (2016). Does investment deposit return in Islamic banks reflect PLS principle? *Borsa Istanbul Review*, 16(1), 32–42. <https://doi.org/10.1016/j.bir.2015.12.001>
- Hannan, T. H., & Prager, R. A. (2006). Multimarket bank pricing: An empirical investigation of deposit interest rates. *Journal of Economics and Business*, 58(3), 256–272. <https://doi.org/10.1016/j.jeconbus.2005.07.004>
- Haron, S., & Nursofiza Wan Azmi, W. (2008). Determinants of Islamic and conventional deposits in the Malaysian banking system. *Managerial Finance*, 34(9), 618–643. <https://doi.org/10.1108/03074350810890976>
- Holod, D., & Lewis, H. F. (2011). Resolving the deposit dilemma: A new DEA bank efficiency model. *Journal of Banking and Finance*, 35(11), 2801–2810. <https://doi.org/10.1016/j.jbankfin.2011.03.007>
- Huang, J., Chen, J., & Yin, Z. (2014). A network DEA model with super efficiency and undesirable outputs: An application to bank efficiency in China. *Mathematical Problems in Engineering*, 2014. <https://doi.org/10.1155/2014/793192>
- Ibrahim, M. H., & Rizvi, S. A. R. (2018). Bank lending, deposits and risk-taking in times of crisis: A panel analysis of Islamic and conventional banks. *Emerging Markets Review*, 35, 31–47. <https://doi.org/10.1016/j.ememar.2017.12.003>
- Isaev, Mirolim and Masih, M. (2017). Macroeconomic and bank-specific determinants of different categories of non-performing financing in Islamic banks : Evidence from Malaysia. *Munich Personal RePEc Archive*, 79719.
- Islamic Financial Services Board. (2020). Data by Country (Islamic Banking). https://www.ifsb.org/psifi_03.php
- Jarrow, R., & Xu, L. (2015). Bank runs and self-insured bank deposits. *Quarterly Review of Economics and Finance*, 58, 180–189. <https://doi.org/10.1016/j.qref.2015.02.006>
- Kamran, H. W., Arshad, S. B. B. M., & Omran, A. (2019). Country governance, market concentration and financial market dynamics for banks stability in Pakistan. *Research in World Economy*, 10(2 Special Issue), 136–146. <https://doi.org/10.5430/rwe.v10n2p136>
- Kang, M. (2020). Demand deposit contracts and bank runs with present biased preferences. *Journal of Banking and Finance*, 119, 105901. <https://doi.org/10.1016/j.jbankfin.2020.105901>
- Kraft, E., & Galac, T. (2007). Deposit interest rates, asset risk and bank failure in Croatia. *Journal of Financial Stability*, 2(4), 312–336. <https://doi.org/10.1016/j.jfs.2006.08.001>
- Krugman, Obsfeld, & Melitz. (2015). *International Economics Theory & Policy* (10th Editi). The Pearson.
- Kurt, S., & Tunay, K. B. (2015). STARMA Models Estimation with Kalman Filter: The Case of Regional Bank Deposits. *Procedia - Social and Behavioral Sciences*, 195, 2537–2547. <https://doi.org/10.1016/j.sbspro.2015.06.441>
- Kwan, S. H. (2003). Impact of deposit rate deregulation in Hong Kong on the market value of commercial banks. *Journal of Banking and Finance*, 27(12), 2231–2248. [https://doi.org/10.1016/S0378-4266\(02\)00322-9](https://doi.org/10.1016/S0378-4266(02)00322-9)
- Li, G., & Shaffer, S. (2015). Reciprocal brokered deposits, bank risk, and recent deposit insurance policy. *North American Journal of Economics and Finance*, 33, 366–384. <https://doi.org/10.1016/j.najef.2015.07.001>
- Linn, F. S., & Ang, V. (2016). Evolving Dynamics of Banks ' Funding and Liquidity Management. In *Financial Stability and Payment Systems Report 2016*.
- Maji, S. G., & Hazarika, P. (2018). Capital regulation, competition and risk-taking behavior of Indian banks in a simultaneous approach. *Managerial Finance*, 44(4), 459–477. <https://doi.org/10.1108/MF-09-2017-0340>

- Meslier, C., Risfandy, T., & Tarazi, A. (2017). Dual market competition and deposit rate setting in Islamic and conventional banks. *Economic Modelling*, 63(July 2016), 318–333.
<https://doi.org/10.1016/j.econmod.2017.02.013>
- Mobin, M. A., & Masih, M. (2014). Do the macroeconomic variables have any impact on the Islamic bank deposits? An application of ARDL approach to the Malaysian market. 39922, 0–29.
- Mohammad, M.O., & Shahwan, S. (2013). The Objective of Islamic Economic and Islamic Banking in Light of Maqasid al-Shariah: A Critical Review. *Middle East Journal of Scientific Research*. Volume 13, Issue SPLISSUE, 2013, Pages 75-84
- Mushtaq, S., & Siddiqui, D. A. (2017). Effect of interest rate on bank deposits: Evidences from Islamic and non-Islamic economies. *Future Business Journal*, 3(1), 1–8.
<https://doi.org/10.1016/j.fbj.2017.01.002>
- Nanda, R. (2020). Can Third Party Funds, Financing to Deposit Ratio, and Capital Adequacy Influence Murabaha Financing? Study of Islamic Banks in Indonesia. *Journal of Accounting Research, Organization and Economics*, 3(1), 84–101.
<https://doi.org/10.24815/jaroe.v3i1.15412>
- Nawaz, T. (2019). Exploring the Nexus Between Human Capital, Corporate Governance and Performance: Evidence from Islamic Banks. *Journal of Business Ethics*, 157(2), 567–587.
<https://doi.org/10.1007/s10551-017-3694-0>
- Önder, Z., & Özyildirim, S. (2008). Market Reaction to Risky Banks: Did Generous Deposit Guarantee Change It? *World Development*, 36(8), 1415–1435.
<https://doi.org/10.1016/j.worlddev.2007.08.007>
- Peia, O., & Vranceanu, R. (2019). Experimental evidence on bank runs with uncertain deposit coverage. *Journal of Banking and Finance*, 106, 214–226.
<https://doi.org/10.1016/j.jbankfin.2019.06.012>
- Pimada, L. M., Mawardi, I., & Herianingrum, S. (2017). Determinants of islamic bank deposit in indonesia. *Academic Research International*, 8(2)(June), 152–160.
- S. Adebola Solarin, S. Hammoudeh, M. Shahbaz. (2018). Influence of economic factors on disaggregated Islamic banking deposits: Evidence with structural breaks in Malaysia. In *Journal of International Financial Markets, Institutions and Money* (Vol. 55). <https://doi.org/10.1016/j.intfin.2018.02.007>
- Sekmen, T. (2021). İkili Bankacılık Sisteminde İslami Bankacılık ve Ekonomik Büyüme. *Optimum Ekonomi ve Yönetim Bilimleri Dergisi*, 8(1), 183–196.
<https://doi.org/10.17541/optimum.821478>
- Siti Amaroh, & Masturin. (2018). The Determinants of Maqasid Shariah Based Performance of Islamic Banks in Indonesia. *Iqtishadia*, 11(2), 354.
<https://doi.org/10.21043/iqtishadia.v11i2.3961>
- Sulub, Y. A., & Mohd Salleh, M. C. (2019). Financial Performance of Islamic and Conventional Banks in Malaysia: A Comparative Analysis. *International Journal of Management and Applied Research*, 6(4), 375–385. <https://doi.org/10.18646/2056.64.19-029>
- Uchino, T. (2014). Bank deposit interest rate pass-through and geographical segmentation in Japanese banking markets. *Japan and the World Economy*, 30, 37–51.
<https://doi.org/10.1016/j.japwor.2014.02.003>
- Ünvan, Y. A., & Yakubu, I. N. (2020). Do bank-specific factors drive bank deposits in Ghana? *Journal of Computational and Applied Mathematics*, 376, 112827.
<https://doi.org/10.1016/j.cam.2020.112827>
- Utami, R., Alfalisyanto, A., & Rahmawati, D. (2020). Attributes Product That Customers Consider: A Case Of Saving Products In Islamic Rural Bank. <https://doi.org/10.4108/eai.5-8-2020.2301228>
- Werner, R. A. (2014). How do banks create money, and why can other firms not do the same? An explanation for the coexistence of lending and deposit-taking. *International Review of Financial Analysis*, 36(C), 71–77. <https://doi.org/10.1016/j.irfa.2014.10.013>

- Xia, Y., Liu, P., & Huang, G. (2021). Bank deregulation, environmental regulation and pollution reduction: evidence from Chinese firms. *Economic Research-Ekonomska Istrazivanja* , 34(1), 2162–2193. <https://doi.org/10.1080/1331677X.2020.1860800>
- Yusoff, R., & Wilson, R. (2005). An econometric analysis of conventional and Islamic Bank deposits in Malaysia. *Review of Islamic Economics.*, 91(1), 31–49.

APPENDIX 1

Articles of past literature on banks deposit

No of Article	References	Countries	Islamic Bank	Conventional Bank
1	Ali et al., (2019)	Sudan	/	/
2	Boadi et al., (2015)	Ghana		/
3	Solarin et al., (2018)	MALAYSIA	/	
4	Unvan and Yakubu (2020)	Ghana ISLAMIC & NON-ISLAMIC		/
5	Mushtaq and Siddiqui (2017)	ECONOMIES	/	/
6	Meslier et al., (2017)	20 COUNTRIES	/	/
7	Ferrouhhi (2017)	Morocco		/
8	Eriemo (2014)	Nigeria		/
9	Dincer et al., (2019)	Turkey		/
10	Kang (2020)	concept paper		/
11	Hamza (2016)	Turkey	/	
12	Grira et al., (2016)	213 COUNTRIES	/	/
13	Hannan and Prager (2006)	USA		/
14	Allen et al., (2015)	concept paper		/
15	Grassa (2018)	GCC countries	/	
16	Brown et al., (2020)	Switzerland 10 DUAL-BANKING		/
17	Ibrahim and Rizvi (2018)	COUNTRIES	/	/
18	Uchino (2014)	Japan		/
19	Anderson et al., (2014)	UK		/
20	Holod and Lewis (2011)	concept paper		/
21	Li and Shaffer (2015)	USA		/
22	Boyacioglu et al., (2009)	Turkey		/
23	Craig and Dinger (2013)	USA		/
24	Önder and Özyildirim (2008)	Turkey		/
25	Collender and Shaffer (2003)	concept paper		/
26	Dia (2013)	concept paper		/
27	Anginer et al., (2014)	USA		/
28	Kwan (2003)	Hong Kong		/

29	Fonseca and González, (2010)	70 countries	/
30	Jarrow and Xu (2015)	concept paper	/
31	Abdul Karim et al., (2013)	14 OIC COUNTRIES	/ /
32	Werner (2014)	concept paper	/
33	Peia and Vranceanu (2019)	concept paper	/
34	Kraft and Galac (2007)	Croatia	/
35	Kurt and Tunay (2015)	Turkey Malaysia	/
36	Amin (2013)	(concept paper)	/
37	Haron and Azmi (2008)	MALAYSIA	/ /
38	Mobin and Masih (2014)	MALAYSIA	/
39	Yusoff and Wilson (2005)	MALAYSIA	/ /
40	Pimada et al., (2017)	Indonesia	/
